

**WHAT IS CLAIMED IS:**

1. A computerized method for activating a warning device on a train at a location comprising the steps of:
  - 5        maintaining a database of locations at which a warning device must be activated and corresponding regulations concerning activation of the warning device;
  - 10        obtaining a position of a train and a speed of the train from a positioning system;
  - 15        selecting a next upcoming location from among the locations in the database based on the speed and the position;
  - 20        determining a point at which to activate the warning device in compliance with a regulation corresponding to the next upcoming location; and
  - 25        activating the warning device at the point.
2. The method of Claim 1, wherein the point is a point in space.
3. The method of Claim 1, wherein the point is a point in time.
4. The method of Claim 1, wherein the determining step includes the step of determining a distance from the train to the next upcoming location based on the position obtained in the obtaining step.
5. The method of Claim 1, wherein the determining step includes the step of determining a time at which the train will arrive at the next upcoming location based on the speed and position obtained in the obtaining step.
6. The method of Claim 1, wherein the warning device is a horn.
7. The method of Claim 1, wherein the location is a grade crossing.

8. The method of Claim 1, further comprising the step of updating the database via wireless communication.

9. The method of Claim 1, wherein the positioning system is a global positioning system.

5 10. The method of Claim 1, wherein the positioning system is an inertial navigation system.

11. A system for automatically activating a warning device on a train at a location, the system comprising:

a control unit;

10 a storage device connected to the control unit, the storage device having stored therein a database of locations at which a warning device must be activated and corresponding regulations concerning activation of the warning device;

a positioning system in communication with the control unit, the positioning system being configured to supply a position of a train and a speed of 15 the train to the control unit; and

a warning device connected to the control unit;

wherein the control unit is configured to perform the steps of

selecting a next upcoming location from among the locations in the 15 database;

20 determining a point at which to activate the warning device in compliance with a regulation corresponding to the next upcoming location; and activating the warning device at the point.

12. The system of Claim 11, wherein the point is a point in space.

13. The system of Claim 11, wherein the point is a point in time.

14. The system of Claim 11, wherein the determining step includes the step of determining a distance from the train to the next upcoming location based on the position obtained in the obtaining step.

15. The system of Claim 11, wherein the determining step includes the step of determining a time at which the train will arrive at the next upcoming location based on the speed and position obtained in the obtaining step.

16. The system of Claim 11, wherein the warning device is a horn.

17. The system of Claim 11, wherein the location is a grade crossing.

18. The system of Claim 11, wherein the system further comprises a wireless transceiver connected to the control unit and the control unit is further configured to update the database with information received via the wireless transceiver.

19. The system of Claim 11, wherein the positioning system is a global positioning system receiver.

20. The system of Claim 11, wherein the positioning system is an inertial navigation system.